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NEVADA DIVISION of ENVIRONMENTAL PROTECTION
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STATE OF NEVADA
Department of Conservation & Natural Resources
DIVISION OF ENVIRONMENTAL PROTECTION

Kenny C. Guinn, Governor
Allen Biaggi, Director
Leo M. Drozdoff, P.E., Administrator

December 12, 2006

William C. Knight, P.E., Vice President
Poggemeyer Design Group
2601 North Tenaya Way
Las Vegas, NV 89128

Re: Clark County Shooting Park – Lead Mitigation Management Practices

Dear Mr. Knight,

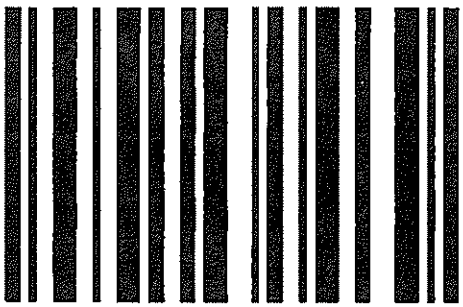
The Nevada Division of Environmental Protection (NDEP) has reviewed your proposal concerning the County Shooting Park and Lead Mitigation Management Practices dated November 20, 2006. As submitted, NDEP concurs with the Poggemeyer Design Group approach to managing lead at the Clark County Shooting Park.

Should you have any questions, I can be reached at (775) 687-9435.

Sincerely,

Clifford M. Lawson, P.E.
Supervisor, Technical Services Branch
Bureau of Water Pollution Control
Nevada Division of Environmental Protection

DEC 19



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POGGEMEYER
DESIGN GROUP
ENGINEERS + PLANNERS + SURVEYORS
LANDSCAPE ARCHITECTS

November 17, 2006

Cliff Lawson
Nevada Division of Environmental Protection
901 S. Stewart Street, Suite, 4001
Carson City, NV 89701-5249

RE: CLARK COUNTY SHOOTING PARK
LEAD MIGRATION MANAGEMENT PRACTICES

Dear Cliff:

As you are aware, Clark County has been granted approximately 2,900 acres of land in the northern Las Vegas Valley to construct and operate a sport shooting park. In order to operate the park in a manner consistent with the best management practices for outdoor shooting ranges and a site specific environmental stewardship plan, the County plans on ensuring that lead from proper range activities is not carried offsite unless it is part of the planned recycling program. Clark County is submitting this description of the proposed management of lead migration in storm water runoff to the Nevada Division of Environmental Protection for review and written concurrence with the proposed management practices..

A perimeter channel system will divert off-site runoff around the site (see Exhibit 1) so that runoff that has the potential to entrain lead will be limited to that runoff originating on-site. The on-site channels will only collect runoff from areas where runoff may come in contact with lead shot or spent ammunition. All onsite runoff will be routed through a double-basin system (see Exhibit 2). The first basin will be within the drainage channel and will slow the flow velocities slightly so that lead shot will quickly settle. This flow will then be diverted off-channel to a second basin designed to give the impounded water time for sediments to settle out. The sediments settling basins have been sized to contain the runoff from a five year historic storm and will have an outlet structure to decant the water within 72 hours. Once the sedimentation basin is filled, the flow in the channel will remain in the channel (due to the backwater effect of the filled basin), pass over the weir, and drain into the City of North Las Vegas Upper Las Vegas Wash Detention Basin immediately to the south of the Shooting Park. The inflow weir into the sedimentation basin and the channel overflow weir will be designed to pass the peak flow from the design storm without overtopping.

The lead shot that settles out in the first basin will be periodically harvested as part of the lead recycling program that will be instituted as part of the overall environmental stewardship program at the Park. The second basin will accumulate predominantly silt-sized particles as the entire site is on an alluvial fan. The basin will be designed with "dead storage" volume so that the basin will be able to accumulate sediments and still contain the entire design storm. The accumulated sediments will be periodically removed and used to replenish backstop material on the rifle and pistol ranges or to repair side berms on the ranges. Management of the sediments will also be addressed as a management practice in the environment stewardship plan.

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The first (lead shot) basin will be concrete lined as will the channel carrying the flows into the basin. This basin is designed to prevent the migration of lead shot off-site. It is necessary to only slightly slow the channel flow velocity to drop any shot out of the channel flows. The weir across the basin will serve to stop further movement of any lead shot once it drops out of the channel flow. The concrete surface will also serve as a barrier to ensure that the basin geometry is not impacted by erosion or lead-shot harvesting.

The sedimentation basin will be designed with an asphalt liner in lieu of concrete as a cost savings measure. The asphalt will also serve as a hard surface that will facilitate removal of accumulated sediments. The basin will be drained by a vertical standpipe with multiple orifices designed to decant a full basin in less than 72 hours. The standpipe will be located at the opposite end of the basin from the inflow weir to prevent sediments from clogging the lower orifices in the standpipe.

The shooting park will be constructed in phases. In the first phase, one basin will be constructed in the northeast portion of the site and another at the west end of the first series of shotgun ranges (see Exhibit 1). The basin, initially constructed at the west end of the Phase 1 shotgun ranges, will be relocated further west to the west end of the first tier of shotgun ranges in a future phase of construction. These basins will be able to contain the runoff from the design storm for the respective watersheds.

We believe that this system will substantially contain on site the lead deposited from the shooting range activities. Further, this design is in accordance with or exceeds the best management practices established in "Best Management Practices for Lead at Outdoor Shooting Ranges," USEPA, June 2005 (EPA-902-B-01-001).

Please provide your written concurrence with our approach to managing lead at the Clark County Shooting Park. I can be reached at 702-255-8100 should you need to discuss this matter at greater length.

Sincerely,

William C. Knight, P.E.
Vice President

Attachments

cc: Don Turner, Clark County Department of Parks and Recreation
Wendy Z. Fenner, P.E., Clark County Department of Public Works
Rob Mrowka, Clark County Air Quality and Environmental Management